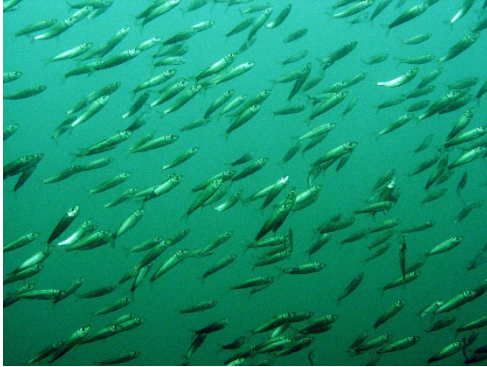




PACIFIC HERRING (*Clupea pallasii*)



Pacific Herring are small silver fish with long thin bodies. They are green or blue on their backs and silvery below. They look somewhat similar to many other forage fish species, especially young Pacific Sardine, which are in the same family. However, Pacific Herring never develop dark spots on their sides like adult Pacific Sardine. Like other schooling forage fish, Pacific Herring are an energy rich food source for many ocean predators and an important link in the marine food web off our coast.

OVERVIEW

- **Oregon Conservation Strategy Species**
- **Size:** Up to about 18 inches long
- **Weight:** Up to about 10 ounces
- **Lifespan:** Up to 19 years
- **Key Strategy Habitats:** Nearshore, Estuaries
- **Similar Species:** Pacific Sardine

RANGE AND DISTRIBUTION

In Oregon: Pacific Herring can be found throughout the state's marine waters and in estuaries.

Everywhere Else: Pacific Herring range from Korea up into the Arctic Ocean and down to Baja California. Here in the Eastern North Pacific, they are more common from the Chukchi Sea to central California.

FUN FACTS

Favorite Food: Plankton and small fish

- Pacific Herring are an important link between plankton and larger predators in the marine food web.
- Pacific Herring spawn in sheltered waters where their eggs stick to a wide variety of surfaces including algae, rocks, jetties, and pilings.
- Pacific Herring often spawn in the same bay or estuary year after year.
- Spawning events are a spectacle to behold, with waters turning white from the massive release of sperm and active feeding by large numbers of birds and marine mammals.

LIFE HISTORY AND ECOLOGY

Pacific Herring spawn in sheltered waters such as inlets, sounds, bays, and estuaries. Large schools gather in these locations seasonally. In Oregon, they are known to spawn in the Columbia River estuary, Tillamook Bay, Yaquina Bay, Winchester Bay, and Coos Bay. Spawning typically occurs from December to January in California and February to March in Oregon and Washington. Spawning



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occurs in summer months in some locations further north. Spawning usually occurs at night but has been observed during daylight hours too and can be quite impressive. The massive release of sperm turns the water white. Sticky eggs are usually deposited from about 0 to 10 feet deep and are sometimes exposed during low tides. The eggs stick to algae, eelgrass, rocks, and other hard substrates such as pilings, sea walls, and jetties. Females will even deposit eggs on top of other eggs in layers as great as 20 eggs deep up to about 2 inches thick. A female can produce between 9,500 and 77,800 eggs. Spawning aggregations attract a wide variety of predators like birds, fishes, and marine mammals. Both the fish themselves and the eggs are eaten. Hatching time varies with water temperature and is about 11-12 days at 51° F but can be as long as 28-40 days at 40° F. Juveniles often spend their first summer in inshore waters, then tend to move offshore to water depths between 330-670 feet until they mature. Pacific Herring tend to move up near the surface to feed at night and down to greater depths during the day. There are many populations of Pacific Herring throughout the extensive range of this species and many life history traits besides spawning timing, such as growth rates, size, age at maturity and life span can vary quite a bit. For example, while Pacific Herring in the Arctic Ocean can live to 19 years, but here in the eastern North Pacific Ocean, they seldom live as long as 14 years. Pacific Herring mature anywhere from 2-8 years of age, with most of the fish in California being mature at 2 and those up in the arctic not maturing till they are 6-8 years old.

Predators of Pacific Herring include many species of birds, fishes, and marine mammals. They are an important link in the marine food web. Humans are also predators of Pacific Herring, using them for food, bait, fish meal, and fish oil. How to best balance human fisheries targeting of Pacific Herring with their importance to other predators is the subject of scientific research and debate. There is ample archeological evidence of native American use of Pacific Herring throughout the Pacific Northwest and Alaska over the last 10,000 years.

DIET AND FORAGING

Pacific Herring forage mainly on zooplankton in the water column including copepods, amphipods, and krill. They also eat many other forms of zooplankton as well as a variety of larval and small fishes. Warm ocean conditions can affect prey availability and diet.

HABITAT CHARACTERISTICS

Pacific Herring live in marine and estuarine waters. They generally live in the water column, but can also be found near the bottom during the day depending of water depth. They usually are found from the surface down to about 500 feet.

CONSERVATION AND MANAGEMENT

Threats: Habitat loss and alteration. Fishing pressure. Toxic chemicals. Disease.



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Conservation and management: Pacific Herring are caught in both commercial and recreational fisheries. They are considered an ecosystem component species, but not a target species in the Coastal Pelagic Fisheries Management Plan (CPS FMP) administered by the Pacific Fisheries Management Council (PFMC). Although no stock assessment for this species is undertaken by PFMC, the catch of Pacific Herring along the west coast of the U.S. is monitored and reported each year in the CPS FMP Stock Assessment and Fishery Evaluation document. Management of both commercial and recreational harvest of Pacific Herring is undertaken by states including Oregon. Most take of Pacific Herring harvested by recreational anglers in Oregon is for bait. State managed commercial fisheries for Pacific Herring that target spawning aggregations occur in both San Francisco Bay and Yaquina Bay. These fisheries have harvest levels set by the state that are based on assessments of local populations.

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